

U.S. Serial No. 10/765,838
Amendment
Response to 8-2-05 OA

Atty. Docket No. 740165-372:

REMARKS

The objections to claims 8 and 15 have been obviated by revising these claims in accordance with the suggestions given by the Examiner in the last Office Action.

The rejection of claims 1, 2, 7-9 and 14-16 under 35 USC § 102(e) over the Limburg '262 patent has been obviated by revising independent claims 1, 8 and 15 to more clearly distinguish the invention from the prior art of record. However, before the revisions to the claims are discussed, a brief recap of the principal features and advantages of the invention will be made so that the language used in the amendment may be more fully appreciated.

Generally speaking, the invention is an electrically-driven steering lock device that uses a combination of an urging device, such as a spring, a lock arm provided on a gear that is engageable with a lock stopper connected to the lock bar, and a cam likewise provided on the gear which is also engageable with the lock stopper. Figures 5A - 5C illustrate the normal operation of the device. Here, arm 52 connected to gear 46 depresses on lock stopper 18 to push lock bar 28 into a groove 40 of steering column 38. When it is desired to release the lock bar 28 from the steering column 38, the gear wheel turns in the direction indicated in Figure 5B, which in turn releases the lock arm 52 from the lock stopper 18. An urging device in the form of spring 44 pulls the lock stopper 18 away from the steering column 38, and hence the lock bar 28 out of the groove 40 as illustrated in Figures 5B and 5C. However, in the event that the lock bar 28 becomes stuck in the groove 40 of the steering column due to torsional forces "R", as shown in Figure 6A, the spring 42 may be insufficient to disengage the lock bar 28 from the groove 40 when the lock arm 52 is disengaged from the lock stopper 18, as illustrated in Figure 6B. Accordingly, a cam 60 provided on the gear wheel 46 proceeds to disengage the lock bar 28 from the steering shaft 38, as is illustrated in Figure 6C. A primary advantage of the invention is that the cam 60 is not used to disengage the lock bar 28 from the groove 40 unless the type of sticking or jamming illustrated in Figure 6A occurs.

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NO. 4618 P. 10

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